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September 08, 1998
98-RF-04523
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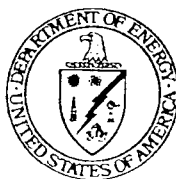


**Rocky Flats
Environmental Technology Site**

**SITE TREATMENT PLAN COMPLIANCE ORDER
QUARTERLY PROGRESS UPDATE**

September 15, 1998

DOE RFFO Review Copy



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REVIEWED FOR CLASSIFICATION/UCNI

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Date 9.8.98

Table of Contents

1.0	Introduction.....	3
2.0	Low-Level Mixed Waste Progress Report	3
2.1	Land Disposal Restricted Treatment Program Management	3
2.2	Characterization for LDR Determination	3
2.3	Offsite Treatment Progress	4
2.3.1	East Tennessee Technology Park TSCA Incinerator	4
2.3.2	Proposed Revision To The STP Rebaseline - Additional Treatment Option	4
2.3.3	Pondcrete/Saltcrete Treatment.....	5
2.4	Waste Forms with Existing Treatment Capacity at Rocky Flats	5
2.4.1	Treatment of Reactive and Waste (formerly Excess) Chemicals	5
2.4.2	Waste Water and Sludge Treatment.....	5
2.4.3	Acid Treatment - Neutralization	5
2.5	Waste Forms for Which Technology Exists But Needs Adaptation or for Which No Technology Exists.....	6
2.5.1	Status of Treatability Groups and Inventory.....	6
2.5.2	Status of Needed Technologies and Capacities	7
2.5.2.1	Stabilization/Immobilization	7
3.0	Future Generation of Mixed Waste Streams.....	8
3.1	Environmental Restoration Wastes.....	8
4.0	TRM Waste Characterization to Meet WIPP WAC Activities.....	9

1.0 Introduction

This Quarterly Progress Update (QPU) report constitutes the FY 1998 fourth quarterly update required by the STP Compliance Order, Section IX, Paragraph 19. The report describes the progress made from June 1998 through August 1998 in implementing the plans and treatment options presented in the approved STP Rebaseline, dated June 17, 1997.

Accomplishments regarding waste characterization, the development of specific onsite waste treatment technologies, and efforts to utilize offsite treatment systems in accordance with the STP Rebaseline are presented. Only those areas in which progress occurred during this reporting period are presented in this QPU. Also, detailed descriptions of individual treatment technologies, as well as onsite and offsite treatment system options, were presented in the STP and STP Rebaseline, and are not reiterated herein.

Section 2 of this report presents progress made in complying with the STP for low-level mixed (LLM) wastes, Section 3 presents progress in complying with the STP for remediation wastes, and Section 4 presents progress in complying with the STP for transuranic mixed (TRM) wastes.

2.0 Low-Level Mixed Waste Progress Report

2.1 Land Disposal Restricted Treatment Program Management

The approved STP Rebaseline presents DOE's preferred strategy for complying with Land Disposal Restricted (LDR) regulations for Low Level Mixed (LLM) waste at Rocky Flats. The STP Rebaseline was issued for public comment in February 1997; nominal comments were received and dispositioned. CDPHE approved the STP Rebaseline, constituting a revision to the STP, on June 17, 1997.

The continuing program management compliance goal is to ensure compliance with all required deliverables (e.g. QPUs, APRs, and other related documents) and to build a framework for continued assessment, management, and control of all LDR compliance efforts at Rocky Flats.

2.2 Characterization for LDR Determination

During this quarter, STP Rebaseline Tier 4 Work Plan activity "Sample and Analyze Acids with D002 Code (RF-W016) " was completed. Characterization assessments and Sampling and Analysis Plans for Analytical Lab Solutions and Miscellaneous Liquids were completed this reporting period.

Also during this reporting period, RCRA Permit Modification #98-2 "Addition of EPA Codes to Unit 750.1 and Modification of Inspection Frequency for Unit 371.1 Stacker-Retriever" was prepared and is presently undergoing review by DOE RFFO prior to submittal to CDPHE in September 1998. The permit modification will allow all solid and liquid STP wastes to be safely sampled in the Tent 5 Permacon on the 750 Pad.

Due to scheduling conflicts, sampling of Analytical Lab Solutions has been delayed from July 1998 until September 1998. The previously planned FY 1998 Work Plan activities "Submit permit applications", "Enter into contracts", and "Initiate construction" for this waste form will be deferred until analytical results are returned and assessed early in FY 1999. The STP Rebaseline Enforceable Milestone "Complete treatment", scheduled for the fourth quarter of FY 1999, is planned and remains achievable despite the above Work Plan activity deferrals.

2.3 Offsite Treatment Progress

2.3.1 East Tennessee Technology Park TSCA Incinerator

Shipments of polychlorinated biphenyl (PCB) - contaminated Organic Liquids from the tanks in Building 774 continues to be delayed due to issues raised by the State of Tennessee regarding receipt of out-of-state wastes for treatment at the Toxic Substances Control Act (TSCA) Incinerator at Oak Ridge, Tennessee.

The TSCA Incinerator remains the primary treatment option for the waste. Presently, there are no near-term onsite or offsite treatment opportunities for treating the PCB-contaminated Organic Liquids. DOE RFFO is evaluating other potential options and will apprise CDPHE and EPA of developments.

2.3.2 Proposed Revision to STP Rebaseline - Additional Treatment Option

As reported last quarter, RFETS plans to send approximately 22 m³ of granulated activated carbon (GAC), a subset of Particulate Sludge (RF-W071) and a remediation waste (see Section 3.1) to the Idaho National Engineering and Environmental Laboratory (INEEL) Waste Experimental Reduction Facility (WERF) incinerator for treatment in Calendar Year (CY) 1998. The State of Idaho recently approved a revision to the INEEL STP to include this RFETS waste.

EPA Region 10 denied INEEL's initial request for CERCLA Offsite Authority due to past waste analysis violations on a waste stream entering the WERF. DOE anticipates timely resolution of EPA Region 10 concerns and INEEL's subsequent receipt of CERCLA Offsite Authority in the near future and will apprise CDPHE of planned RFETS waste shipments for treatment.

2.3.3 Pondcrete/Saltcrete Treatment

Progress made during this reporting period includes the shipment to Envirocare of 1057 m³ of non-compliant Pondcrete (Rocky Flats Cleanup Agreement shipping milestone #98-RFCA Milestone-M4) treatment and disposal. Approximately 613 m³ of non-compliant Pondcrete remains to be treated and disposed.

2.4 **Waste Forms with Existing Treatment Capacity at Rocky Flats**

2.4.1 Treatment of Reactive and Waste Chemicals

Under the Site's RCRA Permit #97-05-30-01, sixteen containers of LLM priority two reactive chemicals (RF-W085) were treated during this reporting period. Approximately 1231 grams of metal powders and fines and 150 grams of sulfide-bearing compounds were directly cemented. Approximately 130 grams of metal powders and fines and 1620 grams of other reactive materials were treated by hydrolysis. During this reporting period, no LLM priority one reactive chemicals were discovered or treated.

2.4.2 Waste Water and Sludge Treatment

To support the 1995 Sitewide Wastewater Treatment Strategy, the Liquid Waste Treatment Upgrades (LWTU) Project was initiated to provide more cost-effective process waste water and sludge treatment systems.

During this reporting period, an evaluation of sludge storage capacity and projected generation was performed. As a result of this evaluation, the implementation schedule for the Temporary Sludge Immobilization System (TSIS) has been delayed an additional year. TSIS implementation is now planned for FY 2002.

2.4.3 Acid Treatment - Neutralization

During this reporting period, approximately 700 gallons of Acids with D002 Code (RF-W016) was treated in Building 374 to bring the total treatment to date to approximately 1000 gallons. Ten 55 gallon drums of Acid with D002 Code were sent to Building 374 for treatment in August 1998. Treatment of the ten drums was initiated on August 19, 1998 and completion is anticipated by September 30, 1998 to meet the STP Enforceable Milestone "Complete treatment of 5m³ (~1325 gallons) of Acids with D002 Code".

2.5 Waste Forms for Which Technology Exists But Needs Adaptation or for Which No Technology Exists

All Rocky Flats LLM waste forms except Solar Pond Water, Wastewater, Nitrate Salts, and Reactive Chemicals are included in this category. For the majority of these wastes, existing technologies are being adapted to treat the LLM waste. Technologies under development at RFETS or elsewhere will be capable of treating all Rocky Flats LLM waste forms to LDR and disposal site waste acceptance criteria (WAC) standards.

2.5.1 Status of Treatability Groups and Inventory

The STP treatability groups and inventory were changed significantly during development of the approved STP Rebaseline. The rationale and methodology used to develop treatability groups and their respective primary and contingency treatment options were presented in detail in the STP Rebaseline and are not reiterated here.

Inventory of Individual Waste Forms

The LLM Waste Inventory Summary was provided in the Calendar Year (CY) 1997 STP Annual Progress Report (APR), Table 2-2. This inventory is used as a general baseline for STP implementation activities and is not repeated in this section. The inventory will be updated in the FY 1998 APR in March 1999. Currently known or projected changes to that inventory are reported below.

Changes in Waste Inventory

Changes made to the RFETS waste inventory during this reporting period include the shipment to Envirocare of 1057 m³ of LDR non-compliant Pondcrete for treatment and disposal.

Also, ten drums of Beryllium Fines (both debris and particulate portions) (RF-W020) re-characterized (see Section 2.5.2.1) to remove EPA Code P015 (beryllium dust, raw product) under the Waste Reassessment Program, will exit the STP inventory and be managed as low level waste. Two drums will remain in the STP inventory but will be re-categorized as mixed debris Combustible waste (RF-W006).

LLM Waste Chemicals to be managed under the STP are being assessed for inclusion in the STP inventory. The STP Waste Chemicals will be organized and managed via treatability groups; treatment options for each group will be presented to CDPHE in future QPUs.

2.5.2 Status of Needed Technologies and Capacities

While significant progress has been made over the past several years in the area of technology development, changes in priority to ship Pondcrete and Saltcrete (Saltcrete shipments were completed in CY 1997) as reflected in the STP Rebaseline has resulted in a decrease in the overall level of effort currently directed at onsite technology development. RFETS technology deployment activities are currently focused on meeting the STP Rebaseline's cost and schedule objectives. Offsite treatment and disposal of the majority of LLM waste is the primary focus of near-term STP activities, however.

Those activities and tasks related to deploying treatment technologies with capacities necessary to treat Rocky Flats LLM wastes to LDR and disposal site WAC standards per the approved STP Rebaseline are found in this section. Only those specific technology areas in which progress occurred during this reporting period are presented in this report.

2.5.2.1 Stabilization/Immobilization

Waste immobilization is the primary treatment envisioned for some of the large volume LLM waste forms. In addition, it is required as the final component for other treatment trains to meet both LDR standards and disposal site WAC; treatment residues produced by oxidation, surface organic contaminant removal, and other technologies may require immobilization by polymer encapsulation or cementation before final disposal.

Polymer Macroencapsulation

All twelve drums of Beryllium Fines (both debris and particulate portions) (RF-W020) were re-characterized to remove EPA Code P015 (beryllium dust, raw product) under the Waste Reassessment Program. Removal of the code obviates the STP FY 1998 enforceable milestone "Complete treatment of Beryllium Fines-Debris Portion" and STP FY 1999 enforceable milestone "Complete treatment of Beryllium Fines-Particulate Portion". Of the twelve drums, ten will exit the STP inventory and be managed as low level waste. The drums will be disposed at the Nevada Test Site (NTS) as soon as possible. Two drums will remain in the STP inventory but will be re-categorized as a mixed debris Combustible (RF-W006) waste with an STP work plan target date for treatment of FY 2004. Verbal CDPHE and EPA regulatory agreement to meet the milestones based on re-characterization of the drums was sought by DOE RFFO and was received at a July 27, 1998 STP Project Manager's Meeting. DOE RFFO submitted written notification of the milestones' completion to CDPHE and EPA on August 18, 1998. The DOE RFFO letter, # 98-DOE-03800, however, erroneously reported the above drum totals as eleven and one, respectively, rather than the aforementioned ten and two.

RCRA Part B Permit Modification #97-8 for a mobile thermoset resin debris treatment process was approved by CDPHE on July 17, 1998. While treatment of Beryllium Fines waste in Building 865 is no longer planned due to facility operability issues, Nuclear Safety Authorization Basis, Job Safety Analysis, and Technical Operations Order development continued that supports installation of the mobile treatment system at other Site locations such as the 750 Pad/Tent 5 Permacon.

Work continued this reporting period towards completion of a DOE RFFO Draft NEPA Environmental Assessment (EA) for all Onsite Treatment of LLM waste at the Site, including polymer macroencapsulation. The NEPA EA will be completed and available for Site review by September 1998.

3.0 Future Generation of Mixed Waste Streams

The primary mission of Rocky Flats is site cleanup, which will generate LLM waste through remedial activities. Some Transuranic Mixed (TRM) waste will also be generated. New mixed waste streams generated as a result of site cleanup will be noted here and specifically addressed in future QPUs and/or APRs per the STP Compliance Order.

3.1 Remediation¹ (Environmental Restoration/Decommissioning) Wastes

Rocky Flats is currently planning remediation activities in accordance with the Rocky Flats Cleanup Agreement (RFCA) decision process. RFCA addresses the requirements for remediation activities at Rocky Flats. The STP Compliance Order provides that treatment of remediation wastes will be accomplished in accordance with the decision documents under the RFCA, or other cleanup agreements, and such wastes would not be added to the STP unless they would be managed in treatment systems implemented under the STP, or if LDR treatment is required and is not provided for in a decision document. Thus, the applicability of LDR treatment standards, and the achievement of LDR compliance for the mixed wastes to which LDR treatment is applicable, would be explicitly addressed in the appropriate decision document.

Trench T-1

Approximately 1,315 cubic yards of remediation waste was excavated from Trench T-1, including 170 drums of pyrophoric depleted uranium, drum fragments, assorted debris, and contaminated soil. Excavation was completed on August 20, 1998. Debris and soil resulting from T-1 remediation activities characterized as non-hazardous will be treated and disposed as LLW per the approved Proposed Action Memorandum (PAM). Preliminary analytical results of samples collected from some excavated drums, however, indicate the presence of PCBs and

¹ The definition of "Remediation Waste" is provided in the Rocky Flats Cleanup Agreement (RFCA).

hazardous solvents. Hence, this excavated material cannot be shipped off-site for calcination and recycling as originally planned and will be properly stored while awaiting treatment. Dependent upon offsite treatment system availability, the waste material may be added to future STP APR inventories and managed in accordance with STP Rebaseline treatment options. Such treatment options, whether under a modified PAM or via the STP, will be presented in future STP QPUs.

Ryan's Pit/Trenches T-3/T-4

Approximately 22 m³ of granulated activated carbon (GAC) contaminated with volatile organic compounds (VOCs) and mercury during thermal desorption treatment of the Ryan's Pit/T-3/T-4 Trench soils and from Building 891 activities, has been accumulated and stored awaiting treatment. Proposed treatment of this mixed waste at the INEEL WERF incinerator is addressed in Section 2.3.2.

4.0 TRM Waste Characterization to Meet WIPP WAC Activities

TRM FY 1998 activities focus specifically on those activities required to ready TRM waste for shipment to the Waste Isolation Pilot Plant (WIPP). These activities include storage, treatment, characterization, and certification. Elements of the above activities for management of newly generated and retrievably stored TRM waste include: 1) waste container storage, 2) waste container retrieval, 3) real-time radiography (RTR), 4) nondestructive radioassay (NDA), 5) headspace gas sampling and analysis (HSGS), 6) waste container content visual inspection, 7) waste container repackaging/processing, and 8) waste container data package preparation and precertification. In addition, the TRU/TRM waste program infrastructure activities will be maintained and developed as necessary to maintain compliance with applicable regulations and requirements. These activities include compliance documentation and procedure preparation and maintenance, training, records management, quality assurance (QA), and waste container database management and reporting.

In 1996, Congress passed the National Defense Authorization Act for fiscal year 1997 (Public Law 104-201) which amended the Land Withdrawal Act of 1992 (Public Law 102-579). Among other things, Public Law 104-201 provides that RCRA land disposal restrictions do not apply to TRU mixed waste designated for disposal at WIPP and that a no migration variance is not required for WIPP. The STP approach continues to be focused on preparing TRM to meet WIPP WAC.

During this reporting period, significant progress made towards the characterization and pre-certification of drums of TRU/TRM waste for shipment to WIPP included:

- NDA on 332 drums was performed
- RTR on 139 drums was performed
- Headspace gas sampling on 129 drums was performed

The EPA audited the Rocky Flats TRU Program in June 1998. RFETS is still awaiting certification from EPA as the last step required prior to shipment of TRU waste. Shipment of RFETS TRU waste to WIPP had been planned to begin after a planned May 1, 1998 opening date. However, because WIPP did not open on the anticipated date, and due to subsequent legal actions involving the opening of WIPP, DOE uncertain when WIPP will open.

The State of New Mexico must still issue a RCRA permit to WIPP prior to shipment of any DOE TRM waste, including that from RFETS, to the WIPP repository.